Faizghar Presentation # 21

Food Drug Interaction

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What is Food-drug Interaction?

- Drug-nutrient interaction: the result of the action between a drug and a nutrient that would not happen with the nutrient or the drug alone
- Food-drug interaction: a broad term that includes drug-nutrient interactions and the effect of a medication on nutritional status

Further to Understand

Some drugs require acidic medium while some alkaline to show optimum efficacy. Only food ensures altering pH value in the digestive tract medium.

Pharmacokinetics

Movement of drugs through the body by

- Absorption
- Distribution
- Metabolism
- Excretion

Benefits of Minimizing Food Drug Interactions

- Medications achieve their intended effects
- Improved compliance with medications
- Less need for additional medication or higher dosages
- Fewer caloric or nutrient supplements are required
- Adverse side effects are avoided

Benefits of Minimizing Food Drug Interactions

- Optimal nutritional status is preserved
- Accidents and injuries are avoided
- Disease complications are minimized
- The cost of health care services is reduced
- There is less professional liability
- Licensing agency requirements are met

Patients at Risk

- Patient with chronic disease
- Elderly
- Fetus
- Infant
- Pregnant woman
- Malnourished patient
- Allergies or intolerances

Risk Factors

- Special diets
- Nutritional supplements
- Tube feeding
- Herbal or phytonutrient products
- Alcohol intake
- Polypharmacy
- Drugs of abuse
- Non-nutrients in foods

Malnutrition Effect on Drugs

- Low albumin levels can make drugs more potent by increasing availability to tissues
- Body composition: obese or elderly persons have a higher ratio of adipose tissue; fat soluble drugs may accumulate in the body ↑ risk of toxicity
- Absorption

  Presence of food and nutrients in intestinal tract may affect absorption of drug

- GI pH can affect drug absorption
- Achlorhydria or hypochlorhydria can reduce absorption of ketoconozole and delavirdine
- Antacid medications can result in reduced acidity in the stomach
- Taking these meds with orange or cranberry juice can reduce stomach pH and increase absorption

Metabolism

Changes in diet may alter drug action

- High protein, low CHO diet can enhance clearance of many drugs
- Grapefruit/juice: inhibits the intestinal metabolism

Excretion

—Patients on low sodium diets will reabsorb more lithium along with sodium

—Urinary pH: some diets, particularly extreme diets, may affect urinary pH, which affects resorption of acidic and basic medications

Drug Side Effects that Affect Nutritional Status

- Appetite changes
- Oral taste and smell
- Nausea
- Dry mouth
- Gastrointestinal effects
- Organ system toxicity
- Glucose levels

Drugs That May Increase Appetite

- Anticonvulsants
- Hormones
- Psychotropic drugs
  - —Antipsychotics
  - —Antidepressants, tricyclics, MAOIs

Summary

- Most drugs have nutritional status side effects.
- Always look for therapeutically significant interactions between food and drugs
- Identify and monitor high risk patients, those on multiple medications and marginal diets

Last but not least